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AN EXTENSION PROGRAM IN RANGE LIVESTOCK, DAIRYING, AND HUMAN NUTRITION FOR THE WESTERN STATES.

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FOREWORD.

A new type of extension conference was held at Fort Collins, Colo., November 5 to 9, 1923. It was composed of the extension directors of Arizona, California, Colorado, Idaho, Montana, New Mexico, Nevada, Oregon, Texas, Utah, Washington, and Wyoming; the livestock, dairy, and human nutrition specialists of these States; representatives of the United States Department of Agriculture from the bureaus of Agricultural Economics, Animal Industry, Home Economics, and Plant Industry, Forest Service, Biological Survey, and Weather Bureau, and the Office of Cooperative Extension Work and Office of Exhibits of the Extension Service (fig. 1). The conference attempted to develop in an organized way a regional program of extension work in certain phases of agriculture and home economics.

The idea of holding such a conference originated in the fall of 1922 in Washington, D. C., at an informal meeting of western extension directors and the Western States conference program committee, appointed by the conference held at Portland, Oreg., in January, 1922. The Fort Collins conference represents a progressive step in the development of a program of extension work for the Western States.

The projects on range livestock, dairying, and human nutrition were selected as program phases to receive first consideration. These subjects were selected not necessarily because they were the most important to each State, but because they presented aspects of common interest to all States in the region represented by the conference.



FIG. 1.—Extension workers attending Western States extension conference at Fort Collins, Colo., November 5 to 9, 1923.

The development of the program was based on the idea that the extension divisions of the State agricultural colleges and the United States Department of Agriculture were organized primarily to carry to the people the practical results of scientific experimentation and research in agriculture and home economics of these institutions. With this in mind, on suggestion of the Western States conference program committee, committees were appointed in the United States Department of Agriculture and the State agricultural colleges to catalogue the available facts relating to these subjects that were ready for extension. In the United States Department of Agriculture a range council was appointed to help organize the livestock data. This council undertook the orderly organization of all material in the department bearing on the subject of range or range-livestock improvement in the form of a handbook for the use of extension workers. Matter relating to human nutrition was assembled and organized from the various bureaus and offices of the department that had contributions to offer. The Dairy Division, Bureau of Animal Industry, made a digest of the research work of the department relating to dairying.

At the Fort Collins conference this material, together with the contributions from various Western State agricultural colleges and special reports and papers presented at the conference by individual members, were assembled and worked over by range-livestock, dairy, and nutrition committees. These committees were in almost continuous session throughout the first three days of the conference and called before them for a hearing any persons attending the conference who had additional contributions to make to the subject under consideration. The three committee chairmen and the conference chairman acted as a coordinating committee, holding meetings once each day. On the fourth day the conference committee, composed of Roud McCann, extension director, Colorado; A. E. Bowman, extension director, Wyoming; Cecil Creel, extension director, Nevada; B. H. Crocheron, extension director, California; Anna M. Turley, State home demonstration leader, Montana; and William A. Lloyd, agriculturist, Office of Cooperative Extension Work, United States Department of Agriculture, made its report to the conference. It recommended a seven-year program incorporating the reports of the range-livestock, dairying, and nutrition committees, which recommendations were adopted by the conference, as follows:

REPORT OF THE COMMITTEE ON RANGE MANAGEMENT AND LIVESTOCK IMPROVEMENT.

The 12 Western States contain approximately 650,000,000 acres of land which can probably never be utilized except in ranging sheep and cattle and in the production of forests. This condition establishes the production of range livestock as one of the basic agricultural industries of this great Western country. Of this area 228,000,000 acres are in the public domain and not under adequate control. The remainder is included either in the national forests or is owned privately. Range management will therefore always be one of the outstanding problems in an extension program.

The following outline gives briefly the principal items which should be included in an extension program for range management and livestock improvement:

- I. Range improvement.
 - A. Fencing.
 - B. Roads and trails.
 - C. Water development.
 - D. Rodent control.
- II. Range management.
 - A. Deferred grazing.
 - B. Rotation grazing.
 - C. Revegetation.
 - D. Salting.
 - E. Herding.
 - (1) Bedding-out system with sheep.
- III. Livestock management.
 - A. Production.
 - (1) Standardization of breeding flocks and herds.
 - (a) Purebred sires of high quality.
 - (b) Culling females.
 - (c) Uniform calf crop and lamb crop.
 - (d) Control breeding.
 - B. Feeding.
 - (1) Supplemental feeding.
 - (a) Silage.
 - (b) Concentrates.
 - (2) Fattening.
 - (a) Calves, yearlings (2-year-olds and over).
 - (b) Lambs, yearlings and ewes.
 - C. Marketing.
 - (1) Shipping.
 - (a) Selection of markets.
 - (b) Preparation and loading.
 - (c) Orderly movement.
 - (2) Market service.
 - (a) Market news.
 - (b) Standard classes and grades—cattle, sheep, wool.
 - (3) Methods and practices. Cooperative organizations.
 - (a) Shipping direct to feeders.
 - (b) Shipping direct to central market.
 - (c) Selling wool.
- IV. Prevention of losses.
 - A. Disease control and eradication.
 - B. Predatory animals.
 - C. Poisonous plants.
 - D. Exposure.
 - E. Animal parasites.
- V. Ranch management.
 - A. Cost-of-production studies.
 - B. Interrelation of irrigated ranch and range.
 - C. Interrelationship of cattle and sheep.

The chief means within the control of the rancher of increasing the profits and insuring the permanency of the range industry are in the reduction of production costs. We believe that this can be most effectively accomplished by laying special emphasis on the following projects.

- (1) Increasing the calf and lamb crops.
- (2) Establishing better feeding and grazing practices.
- (3) Instituting improved breeding methods.
- (4) Saving young animals.
- (5) Keeping records of the ranch business to determine operation costs.

We recommend that the above program cover a period of seven years, and that each State establish definite goals. In this connec-

tion we urge that commencing with 1924 at least one range livestock project be conducted in every organized county producing range livestock.

In carrying out this program we suggest the adoption of the following methods:

- (1) Use of all existing State and Federal experimental results as demonstration material.
- (2) Use of successful ranches as demonstrations.
- (3) Utilization of other specialists qualified to give assistance on range problems.
- (4) Employment of boys' and girls' clubs as a demonstration agency.
- (5) Preparation and utilization of exhibits as teaching agencies.
- (6) Use of publications and other publicity agencies.
- (7) Tours to public and private demonstrations of approved practices.
- (8) Personal contacts with individual stockmen, and with grazing, livestock, and similar associations.

We commend the action of the department and the States in establishing range livestock councils, and believe that these councils have made a most valuable contribution to our extension program in coordinating the subject matter concerned for its early publication in a range livestock handbook.

To assist the extension forces in carrying out this program we urge the appointment by the United States Department of Agriculture of a range-livestock specialist, whose entire time will be devoted to the range States.

Respectfully submitted.

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Proposed participation by States for 1923-24 in the seven-year extension program for range management and livestock improvement.

Item	Arizona.	California.	Colorado.	Idaho.	Nevada.	New Mexico.	Montana. ¹	Oregon.	Utah.	Washington.	Wyoming.	Texas.	Total.
Range improvement:													
A. Fencing.....	x	x										x	3
B. Roads and trails.....	x	x											1
C. Water development.....	x	x		x	x	x			x			x	7
D. Rodent control.....	x	x	x	x	x	x		x	x	x	x	x	11
Range management:													
A. Deferred grazing.....	x	x	x		x	x		x					6
B. Rotation grazing.....				x								x	6
C. Revegetation.....		x	x										3
D. Salting.....	x				x	x							3
E. Herding.....						x							1
Livestock management:													
A. Production—													
(1) Standardization of breeding flocks and herds—													
(a) Purebred sires of high quality..	x	x	x	x	x	x		x	x	x	x	x	11
(b) Culling females.....	x	x	x	x	x	x		x	x	x	x	x	7
(c) Uniform calf crop and lamb crop	x	x	x		x	x		x	x	x	x	x	10
(d) Control breeding.....	x				x	x			x			x	6
B. Feeding—													
(1) Supplemental feeding—													
(a) Silage.....	x	x	x	x	x	x		x	x				8
(b) Concentrates.....	x	x	x	x	x	x		x	x				8
(2) Fattening—													
(a) Calves, yearlings (2-year-olds and over).....	x	x	x	x	x			x	x		x	x	9
(b) Lambs, yearlings and ewes.....	x		x	x	x			x	x	x	x	x	9
C. Marketing—													
(1) Shipping.....	x		x		x								3
(2) Market service—													
(a) Market news.....	x	x	x		x	x		x					6
(b) Standard classes and grades—													
Cattle.....	x	x	x	x	x	x			x			x	8
Sheep.....	x	x	x	x	x	x							4
Wool.....	x	x	x		x			x		x	x	x	8
(3) Methods and practices. Coopera-													
tive organizations—													
(a) Shipping direct to feeders.....			x	x		x		x	x		x	x	7
(b) Shipping direct to central mar-			x										
ket.....						x		x	x				3
(c) Selling wool.....			x					x	x	x			4
Prevention of losses:													
A. Disease control and eradication.....	x	x	x	x	x			x	x	x	x		10
B. Predatory animals.....	x	x			x	x		x					5
C. Poisonous plants.....	x		x		x	x			x		x		6
D. Exposure.....					x								1
E. Animal parasites.....	x				x	x					x	x	5
Ranch management:													
A. Cost-of-production studies.....	x		x	x	x			x	x	x			7
B. Interrelation of irrigated ranch and range.....	x		x	x					x				4
C. Interrelationship of cattle and sheep.....	x								x				2

¹ Data from Montana not available.

REPORT OF THE COMMITTEE ON NUTRITION.

PROBLEMS RECOGNIZED.

(1) Poor physical condition of the rural population as evidenced by a high percentage of deviation from the accepted range of weight for height and age in children of preschool and school age, and by a high incidence of physical defects and bodily maladjustment directly traceable to poor nutrition in adults as well as children.

(2) A food supply inadequate for health in certain sections of many States, coupled with poor distribution of available food products.

REMEDIES SUGGESTED.

(1) Bring about a realization of the existing physical condition and its significance.

(2) Teach fundamental food habits that will correct this condition.

(3) Develop an adequate food supply in the entire area reached by the conference, making each locality self-sustaining, in so far as is economically feasible, through—

(a) Better distribution of available supply of fruits and vegetables through marketing channels.

(b) Better distribution of vegetable production by the promotion of home gardens planned to meet the dietary needs of the family and to conserve the farm income.

(c) Better conservation and timely distribution of the farm meat supply through the adoption of methods of canning, drying, and curing, appropriate to the locality, and through the organization of meat rings as needed.

(d) Systematic provision for other food needs during the entire year through methods of food conservation appropriate to the locality.

(e) Study of the adequacy of the milk supply and the development of a safe and adequate supply over the entire region. Education of the people in the use of dried or canned milk in sections where the supply is temporarily inadequate.

(f) Training in the care and handling of milk and milk products for home and market use.

(g) Promotion of the farm poultry flock and encouragement of the use of eggs and poultry products.

(h) Utilization of a larger percentage of whole grain products in the diet, and the encouragement of local milling of whole grain flour and breakfast foods where economically feasible.

SUGGESTED GOALS.

(1) Definite improvement in the nutritive condition of the rural population as indicated by approximation to the accepted range of weight for height and age, and freedom from physical defects and bodily conditions directly traceable to faulty food habits or adversely affecting nutritive status.

It is suggested that each State set for itself an increasing annual goal for the years 1924 to 1929, in terms of a percentage increase in the number of contacts made, number of better food and living practices established, and number of persons improving in nutritive condition.

(2) The assembling by each State of all available data regarding the nutritive condition of the rural population; the study of these data to determine their adequacy as a guide for future action, and the laying of necessary plans to supplement these data.

(3) We commend the steps already taken toward working out a cooperative program with interested agencies and recommend that further efforts be made along this line.

(4) We recommend that the United States Department of Agriculture and the research divisions of the land-grant colleges direct increased attention and funds toward research in human nutrition.

METHODS RECOMMENDED.

(1) Study conditions.

(2) Plan remedial measures in terms of points of view to be accepted and practices to be adopted.

(3) State results to be expected from practices adopted.

(4) Use demonstrations by adults and juniors to show the results of the practices recommended.

(5) Measure progress by a survey of the community to learn the number of people to be reached, and successive estimates of people already reached.

(6) Develop adequate State, county, and community publicity.

(7) Keep in close touch with State experiment station and other research agencies.

(8) Correlate work of the nutrition specialist and other specialists on the State staff. It is suggested in the development of the nutrition project—

(a) That emphasis be laid upon the connection between food habits and physical condition.

(b) That the nutrition message be given to all members of the family.

(c) That the importance of positive health be stressed, and training be given in visualizing the characteristics of the healthy child.

(d) That the contribution of boys' and girls' clubs toward the nutrition program be utilized to the fullest possible extent through growth work, individual team demonstrations, and achievement-day programs. Although the committee recognizes that the demonstration work with groups of school children has proved a valuable aid to the nutrition program both in the home and in the school, we believe that the most fundamental and far-reaching results are to be obtained by arousing the intelligent interest of parents in the physical condition and the food and health habits of the entire family.

SUGGESTED RESEARCH.

(1) Study of appropriate methods of meat preservation in regions where canning is difficult.

(2) Study of the adequacy, economy, and sanitation of the local milk supply.

(3) Cooperative study by the Bureau of Animal Industry and the Bureau of Home Economics, United States Department of Agriculture, on the substitution values in human nutrition of efficient protein foods such as milk, meat, eggs, and fish.

(4) Further study of adequate dietary standards.

(5) Dietary surveys.

(6) Establishment of a nutrition council in the United States Department of Agriculture and in the respective land-grant colleges.

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REPORT OF THE COMMITTEE ON DAIRYING.

In November, 1922, the extension directors of the Western States assembled in conference at Washington decided on dairying as one of the three major lines of work which should be emphasized in the Western States during the next few years. The report of this committee is therefore based upon the assumption that dairying should be increased in the West, both from the standpoint of efficiency and from that of increase in area or volume.

The work in dairying is greatly assisted by the fact that methods of proper dairy procedure have already been well established and that it is unnecessary to await further research in order to develop the dairy industry in the West. The practical aspects of dairying are well recognized and are already practiced by some dairymen, so that the extension problem consists in inducing more dairymen to adopt practices that have already proved efficient.

The problem of the agricultural extension service may therefore be summarized as requiring: (1) A proper conception of objective, (2) wise and efficient leadership, and (3) large volume of effort. Assuming that the methods and leadership are correct, the increase in dairy efficiency in the West seems to rest in the main upon the amount of effort the States are willing to exercise in bringing about an increase in dairy efficiency. It is doubtful if the location of demonstrations is necessary in part of the major dairy districts. In most communities dairymen can be found who are already practicing successful methods of dairying and who can be utilized as object lessons for others who are less successful. In many sections the campaign method of dairy extension can be used without first going through the test or demonstration stages.

According to the last census, the 12 Western States had a population of 8,902,872. These States produced dairy products equivalent to 770,205,844 gallons, or 6,623,770,258 pounds, of milk. On the basis of an average consumption of 920 pounds of milk per capita in the United States, as reported by the 1922 Yearbook of the United States Department of Agriculture, the total present consumption of milk and milk products of the present population in the Western States is 8,190,642,240 pounds. In other words, the Western States apparently produce about 80 per cent of the milk products required for the consumption of the local population. It is therefore evident that an increase in dairying in the West can be made without involving distant markets or the difficulties of long transportation.

Many sections of the West are believed to be naturally adapted to the dairy industry. The production of alfalfa hay in irrigated regions and the luxuriant growth of pasture grasses in the Northwest supply an economic basis for dairying. In the semiarid regions of the West the limiting factors in the growth of agricultural crops are water and nitrogen. The development of the dairy industry in the cultivated districts of the Western States will make possible a more permanent type of agriculture than a system based upon crops alone rather than crops and livestock.

This committee therefore concurs in the conclusions of the Washington conference that a correct basis exists for the improvement and enlargement of the dairy industry in the West, and it recommends to the extension services of the Western States that widespread

importance should be given to dairy projects during the coming years up to and including the year 1930. At that time the census will again permit a survey of the situation with regard to the balance between dairying and other agricultural industries. We suggest as a goal for the Western States as a region that by 1930 these States should produce a volume of milk sufficient to supply their own population. This goal is based upon the assumption that the Western States should be self-supporting in dairy products and that there will be a relatively large increase in population in this region during the next few years.

The Western States already have a large number of dairy projects in active operation. The following list is given to indicate the wide range of present-day dairy extension work.

WORK RELATING TO BETTER ANIMALS.

- (1) Cow-testing associations.
- (2) Cow-testing circles.
- (3) Purebred sires.
- (4) Better females.
- (5) Bull associations.
- (6) Bred-heifer clubs.
- (7) Cow-and-calf clubs.
- (8) Dairy-record clubs.

WORK RELATING TO BETTER FEEDING.

- (1) Improved rations.
- (2) Silo campaigns.
- (3) Tame-grass pastures.
- (4) Young calf-feeding clubs.

WORK RELATING TO BETTER CARE AND HEALTH.

- (1) Better barns and milk houses.
- (2) Tuberculosis control.

WORK RELATING TO BETTER MARKETING.

- (1) Quality campaigns in dairy products.
- (2) Organization of cooperative-marketing associations.

This list of projects is comprehensive and is intended to state broadly the general lines of extension work in dairying that are now in operation in the several Western States. Your committee does not believe that it is desirable for any one State to stress a large number of projects at any one time. It recommends that each State should select two or three major projects and concentrate attention upon those projects as the most feasible way by which to obtain dairy improvement. It is believed that extension experience throughout America indicates that work upon one or two projects in a state-wide way is more desirable than work upon many projects. By that means mass action can be obtained and all the agencies available to the extension service can be concentrated upon one or two ideas so that publicity agencies, affiliated organizations, and the public press can be more readily brought to bear upon the problem in hand.

Acting upon the same principle, it is the belief of the committee that the Western States should, if possible, likewise agree upon a limited number of projects which are to be stressed in the entire West in order that the combined action of the States may obtain the result desired. In so recommending it is not felt that the other projects will in any sense be neglected because the success of one or two major lines of work brings with it the desire upon the part of the dairyman for general improvement. Other practices will be

adopted by him with less effort from the extension service than in the earlier and larger campaigns. The States in the West have planned to emphasize certain projects as shown in the following table:

Projects to be emphasized.

Project.	Arizona.	California.	Colorado.	Idaho.	Montana. ¹	Nevada.	New Mexico.	Oregon.	Utah.	Washington.	Wyoming.	Texas.	Total.
Cow-testing associations.....	×	×	...	×	...	×	×	×	×	×	8
Cow-testing circles.....	×	×	...	×	...	×	×	×	×	×	4
Purebred sires.....	×	×	×	×	×	×	...	×	8
Better females.....	×	×	×	×	...	×	×	...	3
Bull associations.....	×	×	...	×	×	×	×	×	6
Dairy-records club.....	×	...	×	×	×	×	×	1
Better rations.....	×	...	×	×	...	×	×	...	×	×	×	×	8
Silo campaigns.....	×	×	...	×	×	...	×	×	×	×	3
Tame-grass pastures.....	×	×	...	×	×	...	×	×	...	×	4
Quality campaigns.....	×	...	×	×	...	×	×	×	×	×	...	×	5
Tuberculosis control.....	...	×	×	×	...	×	×	×	×	×	×	...	7
Better barns.....	×	...	×	×	...	×	×	×	...	4
Organizing cooperative associations.....	×	×	×	×	...	2
Size of dairy units.....	×	1
Dairy clubs.....	...	×	×	×	×	×	×	×	7

¹ Data from Montana not available.

It will be noted from the table that of the 11 States reporting, 8 are stressing cow-testing associations, purebred sires, and better rations; 7 are stressing dairy club work and tuberculosis control; and 5 are stressing the improvement in quality of milk and milk products.

In view of this survey, your committee recommends that the following seven projects be adopted as a general program for the Western States:

- (1) Improvement in the quality of animals:
 - (a) Cow-testing associations.
 - (b) Purebred sires.
 - (c) Bull associations.
- (2) Improvement in the feeding of animals:
 - (a) Better rations.
 - (b) Dairy clubs.
- (3) Improvement in the health of animals:
 - (a) Control of tuberculosis.
- (4) Improvement in the marketing of milk:
 - (a) Campaigns for improvement in quality of dairy products.

In suggesting the above program it is recommended that all States adopt one or more of the above projects as major campaigns for the years 1924 to 1930, inclusive, and that the volume of effort hitherto expended upon dairy work be increased in so far as the resources of the extension service permit and other interested agencies can be induced to cooperate. Attention is called to the fact that the agricultural extension service in each State is only one of the numerous agencies interested in the increase in dairy production. It is recommended that each State invite other public and quasi-public agencies to cooperate in the dairy projects under way and outline with these various agencies their definite parts in the campaigns to be carried out. We further recommend that as rapidly as possible definite annual goals be set as a mark toward which the extension service and other cooperating agencies will aim in the years to come. We further suggest that in the projects for the improvement of quality of animals, the health of animals, and quality

of products the drive or local campaign method of procedure should be used where drastic and immediate improvement is necessary.

The method to be used in the formation and maintenance of cow-testing associations will vary under the conditions found in the several States, but particular attention is called to the new method adaptable to regions with small herds, whereby the dairyman himself takes the samples, thus lessening the work of the cow tester and making it possible for him to test a larger number of cows. Particular attention is drawn to the fact that cow testing does not of itself improve dairying. It is only by the intelligent and continued use of cow-testing records that improvement is made. We believe the agricultural extension service should find some means whereby it will not be necessary to give so much attention to the reorganization and rehabilitation of cow-testing associations, thereby making it possible to give more time to the interpretation and analysis of cow-testing records with the dairymen concerned. Although striving for the high herd records is commendable, the practice of leaving low-producing cows out of the test in order to obtain high averages for advertising purposes should be discouraged. We believe that the drive or campaign method of organization should be used in organizing new associations.

In the introduction of purebred sires, special attention is called to the fact that purebred sires may not of themselves be sufficient to create dairy improvement. It is only bulls that come from a known high-producing ancestry that should be used in purebred sire work. A standard of production should be determined and no bulls from mature cows producing less than 400 pounds of butterfat per year should be used in purebred sire work. Bull associations have been a successful method of introducing purebred sires in regions where the herds are small and in close proximity. The campaign or drive method of introducing purebred sires is recommended for regions where a large number of scrub bulls are used on dairy farms, or where the grade and purebred bulls are of a low-producing ancestry.

Special opportunity exists in the West for the improvement of rations. Large numbers of dairymen are not feeding intelligently. Probably the proper feeding of dairy stock is second in importance only to that of better blood. We call attention to the desirability of greater use of silos as stimulative in the growth of summer forage crops and as an aid toward a greater diversification of agriculture. In certain States the improvement of pasture methods is important.

The dairy-calf club work is divided into three phases, each one of which naturally fits into the program of the Western States. These phases are as follows:

(1) The young calf-feeding club wherein boys and girls raise and feed calves which are from 1 to 6 months of age.

(2) The bred-heifer club, which is not only a feeding but a breeding project and which takes the heifer from breeding to freshening.

(3) The cow-and-calf club not only includes feeding and breeding but also cow testing, covering one entire lactation period from the period of freshening.

A fourth and less prevalent phase of dairy club work is in the dairy-management club, wherein members undertake to keep the records for an entire herd of cows and to assist in their management.

In the foregoing club work we recommend that only high-grade heifers, preferably from cows with testing-association records, be

obtained. Purebreds may be purchased, but they are not recommended except where the project can be carried on at a profit to the member. Nothing but registered purebred bulls should be used on club heifers. We recommend that some form of team demonstration or exhibit demonstration be conducted by the club, and that club heifers be judged according to merit and that awards be made accordingly.

On the control of tuberculosis, attention is called to cooperation with the regulatory authorities of the State. It is understood that the agricultural extension service must exercise no regulatory authority but should act only in an educational capacity in informing farmers of the menace of the disease and of the accepted methods whereby it may be partially or wholly controlled. It is believed that tuberculosis-free areas may be extended in many portions of the West where tuberculosis is now wholly or nearly absent and thus prevent the spread of disease.

In campaigns for the improvement of the quality of dairy products it appears necessary to show producers the economic importance of better products. We recognize that the payment for cream should be based upon quality, since some inducement should be offered to the producer for the extra labor, care, and equipment necessary in caring for the product. Inspection of farms should be by creamery field men and dairy inspectors, with an examination of the final product for quality at the factory. We recommend the use of score cards as permanent records, whereby the increase or decrease in the quality of dairy products from the region concerned can be established.

We recommend that the United States Department of Agriculture compile definite data upon methods for the prosecution of the above projects, and that, where necessary, special literature be published to meet the special conditions of the Western States. While dairy problems are somewhat similar in nature wherever they occur, such literature is more acceptable and useful to western dairymen when it bears particularly upon their problems and where feeds and feeding are treated from a western standpoint.

We recommend that the Office of Exhibits of the United States Department of Agriculture prepare small portable exhibits to be used in connection with purebred-sire, cow-testing and similar campaigns, suitable in size for use in store windows of the towns. These exhibits should be relatively cheap in manufacture so that they could be duplicated in quantity for use in many places at one time.

We recommend to the western office of the Dairy Division at Salt Lake City that in so far as possible their efforts be directed toward the prosecution of the seven projects outlined in this program of work and that the men in that office should be prepared to give assistance upon the extension methods involved in the above projects.

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Committee.

CONCLUSION.

The above committee reports are the work of practical extension workers. They were adopted, having in mind what it is possible to do with the extension resources, men, and money, now available. It is recognized that the programs are far from perfect, nor are they intended to be a complete analysis of the respective projects. There exists a considerable accumulation of facts, the result of research and experiments, not taken into direct consideration in planning the above programs because means of extending the application of such facts to practice is not now available. Provision for the further development of the above programs was made by the appointment of standing committees on range livestock, dairying, and human nutrition to continue throughout the year and to report at the Western States extension conference to be held in the fall of 1924 at Tucson, Ariz. In the meantime, the program will be taken by the extension directors in the various States to producers' associations, home economics associations, and county and community program of work committees for their consideration, suggestions, and cooperation. Not all of the phases indicated will be adopted in any one State but only such parts as the local conditions in each State, county, or community warrant, and the existing extension organization can most effectively handle. All the extension work in the Western States on the projects listed above will be so organized as to contribute to the carrying out of this program, and the work on each State will be reenforced by the work being carried on along similar lines in all of the other States in this region.

At the regional conference in 1924 a report will be received from a special committee which has been appointed to develop a tentative program in crops to reenforce the programs adopted in range livestock, dairying, and human nutrition. The development of a complete program of extension in agriculture and home economics in the Western States is being undertaken progressively. A program committee will report to the conference in 1924 a suggested sequence of subjects for annual conferences until 1930, each year taking up some additional phase or phases, in a manner similar to that followed in 1923. At each of these conferences in succeeding years the operation of the programs previously adopted will be reviewed and revised as conditions and experience warrant.

